

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



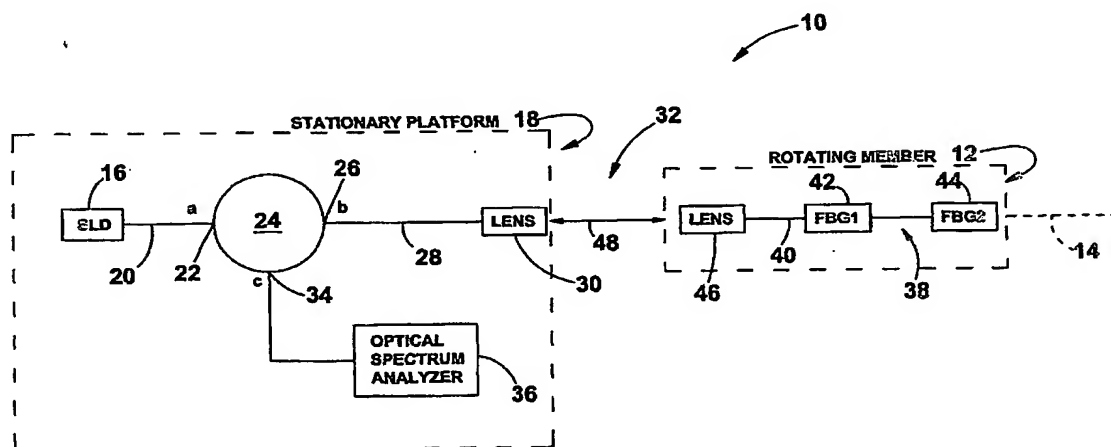
(43) International Publication Date
14 October 2004 (14.10.2004)

PCT

(10) International Publication Number
WO 2004/088884 A1

- (51) International Patent Classification⁷: **H04B 10/22**,
G01D 5/26
- (21) International Application Number:
PCT/ZA2003/000181
- (22) International Filing Date: 5 December 2003 (05.12.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
2003/2585 2 April 2003 (02.04.2003) ZA
- (71) Applicant (for all designated States except US): **RAND AFRIKAANS UNIVERSITY [ZA/ZA]**; Cnr. Kingsway and University Road, 2006 Auckland Park (ZA).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **SWART, Pieter, Lodewikus [ZA/ZA]**; 43 Drakens Avenue, 1709 Quellerina (ZA). **KRUGER, Ludi [ZA/ZA]**; 575 34th Avenue, Villieria, 0186 Pretoria (ZA). **CHTCHERBAKOV, Anatoli, Aleksandrovich [RU/ZA]**; 77 Kessel Street, Fairland, 2195 Johannesburg (ZA). **VAN WYK, Albertus**, Japle [ZA/ZA]; Plot 64, Kameeldrif East, 0182 Pretoria (ZA).
- (74) Agent: **LE ROUX, Marius**; D.M. Kisch Inc., P.O. Box 781218, 2146 Sandton (ZA).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:
— with international search report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: OPTICAL SYSTEM AND METHOD FOR MONITORING VARIABLE IN ROTATING MEMBER



(57) Abstract: A system (10) for monitoring a variable such as torque relating to a rotating member (12) comprises a source (16) of optical energy for emitting optical energy from a stationary measuring station (18). A transducer (42, 44) which is mountable on the member (12) in use modulates optical energy received from the source in accordance with changes in the variable. An optical transmission system (30, 48, 46) which is provided between the source and the member enables transmission through free space of optical energy between the member and the station, so that the modulated energy may be analyzed to monitor the variable.

WO 2004/088884 A1